

CLAIMS

1. A laser driving device comprising:

a laser driving section for supplying a driving current for causing a laser to emit light;

a temperature detecting section for detecting a temperature of the laser; and

a voltage control section for supplying a source voltage to the laser driving section while changing a voltage value of the source voltage in accordance with the temperature detected by the temperature detecting section.

2. The laser driving device of claim 1, further comprising a power control section for causing the laser to emit light with a predetermined emission power by controlling an instruction value for the laser driving section so as to adjust the driving current supplied from the laser driving section.

3. The laser driving device of claim 2, further

comprising a setting section for instructing a setting of a reference voltage in accordance with an amount of light to be emitted by the laser.

4. The laser driving device of claim 2, further comprising an emission power detecting section for detecting a value which is in accordance with the emission power of the laser and for outputting a signal corresponding to the value,

wherein the power control section controls an instruction value to the laser driving section based on a voltage of the signal which is output from the emission power detecting section, and the reference voltage, in such a manner that the voltage of the signal equals the reference voltage.

5. The laser driving device of claim 4, wherein, characteristics between an operating voltage, which is necessary for the laser to operate, and the driving current differ depending on temperature; and

the voltage control section determines the voltage value

of the source voltage based on the driving current and the characteristics.

6. The laser driving device claim 5, wherein,
the operating voltage increases as the temperature decreases; and

the voltage control section supplies a higher source voltage as the temperature decreases.

7. The laser driving device claim 1, wherein the laser driving section outputs a driving current for causing a laser whose wavelength is within a range from 400 nm to 430 nm to emit light.

8. An optical head for performing a data write and/or read operation with respect to an information recording layer of a storage medium, comprising:

a laser;

a laser driving device for supplying a driving current for causing the laser to emit light;

an objective lens for converging light from the laser onto the information recording layer; and

a light-receiving section for receiving light reflected from the information recording layer and for outputting a signal which is in accordance with the amount of light, wherein,

the laser driving device includes:

a temperature detecting section for detecting a temperature of the laser; and

a voltage control section for supplying a source voltage to the laser driving section while changing a voltage value of the source voltage in accordance with the temperature detected by the temperature detecting section.

9. An optical disk apparatus for performing a data write and/or read operation with respect to an information recording layer of an optical disk, comprising:

an optical head for radiating light toward the optical disk, and generating and outputting a servo signal based on light which is reflected from the information recording

layer;

a control signal generating section for generating a control signal for controlling the position of a focal point of the light based on the servo signal which is output from the optical head; and

a driving circuit for generating a driving signal based on the control signal, wherein,

the optical head includes:

a laser;

a laser driving device for supplying a driving current for causing the laser to emit light;

an objective lens for converging light from the laser onto the information recording layer;

an actuator for adjusting a position of the objective lens based on the driving signal; and

a light-receiving portion for receiving light reflected from the information recording layer and for outputting a signal which is in accordance with the amount of light, wherein,

the laser driving device includes:

a temperature detecting section for detecting a temperature of the laser; and

a voltage control section for supplying a source voltage to the laser driving section while changing a voltage value of the source voltage in accordance with the temperature detected by the temperature detecting section.

10. A laser driving method comprising the steps of:

supplying a driving current for causing a laser to emit light;

detecting a temperature of the laser; and

supplying a source voltage when executing the step of supplying the driving current, a voltage value of the source voltage being changed in accordance with the detected temperature.